MAMMALIAN SPECIES No. 579, pp. 1–6, 3 figs.

Leopardus wiedii.

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Published 1 June 1998 by the American Society of Mammalogists

Leopardus wiedii (Schinz, 1821)

Margay

Felis wiedii Schinz, 1821:235. Type locality "Morro de Arará, rio Mucurí, Bahia, Brasil."

Felis macroura Wied, 1826:371. Renaming of *Felis wiedii* Schinz, 1821 (subsequent authors used mostly its emended form *macrura*).

Felis elegans Lesson, 1830:69. Type locality Brazil.

Felis glaucula Thomas, 1903:235. Type locality "Beltran, Jalisco, Mexico."

Felis pirrensis Goldman, 1914:4. Type locality "Cana, Darien, eastern Panama (altitude 2,000 feet)."

CONTEXT AND CONTENT. Order Carnivora, Suborder Feliformia, Superfamily Feloidea, Family Felidae, Subfamily Felinae, Genus *Leopardus* (Gray, 1842). There is no agreement on whether *Leopardus* is a full genus or a subgenus of *Felis* (Cabrera, 1957; Ewer, 1973; Hall, 1981; Hemmer, 1978; Leyhausen, 1979; Salles, 1992; Wozencraft, 1993). Kitchener (1991) and Nowak (1992) provide a systematic table and Salles (1992) a series of cladograms of the different opinions regarding the taxonomy of the genus. The genus *Leopardus* includes five living species (Leyhausen, 1979), *L. pardalis* (ocelot), *L. wiedii* (margay), *L. tigrinus* (oncilla), *L. geoffroyi* (Geoffroy's cat), and *L. guigna* (kodkod). Wozencraft (1993) placed the ocelot, margay, and oncilla in *Leopardus*, and the Geoffroy's cat and kodkod in *Oncifelis*. Ten subspecies currently are recognized (Cabrera, 1957; Hall, 1981):

L. w. amazonica (Cabrera, 1917:28). Type locality "Tabatinga, Amazonas, Brasil."

L. w. boliviae Pocock, 1941*a*:237. Type locality "Buena Vista, Santa Cruz, Bolivia (altitude 300 m)."

L. w. glaucula (Thomas, 1903:235). See above.

L. w. nicaraguae Allen, 1919:357. Type locality "Volcán de Chinandega, Chinandega, Nicaragua."

L. w. oaxacensis (Nelson and Goldman, 1931:303). Type locality "Cerro San Felipe, near Oaxaca, Oaxaca, Mexico (altitude 10,000 feet)" (includes *cooperi*).

L. w. pirrensis (Goldman, 1914:4). See above (includes *ludovici*).

L. w. salvinia Pocock, 1941*b*:366. Type locality "Vera Paz, Guatemala."

L. w. vigens (Thomas, 1904:192). Type locality "Igarapé-Assu, near Pará, Pará, Brasil (altitude 50 m)."

L. w. wiedii (Schinz, 1821:235). See above (includes *macroura, elegans, pardictis*).

L. w. yucatanica (Nelson and Goldman, 1931:304). Type locality "Mérida, Yucatán, Mexico."

DIAGNOSIS. The margay (Fig. 1) resembles a small, long-tailed ocelot, from which it differs by several traits: shorter head and body length of 544.9 mm (425–720 mm, $n = 90$), as opposed to 775 mm (660–1,015 mm, $n = 111$) for the ocelot (*Leopardus pardalis*); longer tail, 384.1 mm (300–490 mm, $n = 92$), versus 345.4 mm (260–445 mm, $n = 112$); and very large eyes (Guggisberg, 1975; Hall, 1981; Oliveira, 1994, in press; Oliveira and Cassaro, 1997). Although there is some size overlap between them, only 2.2% of 90 specimens of margays examined (one male and one female) overlapped with the length of head and body of the smallest female ocelot. Cranially, margays differ from ocelots by a number of characters: smaller size and weaker structure of the skull (mean total length of skull of *L. pardalis* and *L. wiedii* from Brazil are 133.37 mm, $n = 42$; 92.1 mm, $n = 33$; Oliveira, in litt.); shallower postorbital constriction; very large orbits, with axial diameter about 32% of the occipitonasal length of the skull (<25% in the ocelot); slight or no postorbital constriction (which is well developed in the ocelot); postorbital processes relatively longer and slender (fusing with jugal in some skulls), heavy and short in *L. pardalis*; broader and shorter braincase, with greatest elevation at the frontoparietal suture, as opposed to the greatest elevation at the interorbital suture; dorsal contour evenly convex from the nasal to the occipital border; absence of sagittal and lambdoidal crests, which are highly developed in the ocelot; and temporal crests lyriform, instead of two almost straight and narrow lines (Allen, 1919; Hall, 1981). Margays differ from oncillas by the hair on the nape directed backwards in the latter species. Additionally, *L. tigrinus* has head and body proportions like those of a domestic cat (*Felis catus*), is on average smaller (492.6 mm, 400–591 mm, $n = 58$), has a shorter tail (277.6 mm, 204–380 mm, $n = 58$), and for the most part has smaller and more abundant, solid dot-like spots and open rosettes in the pelage (Emmons and Feer, 1990; Husson, 1978; Oliveira, 1994, in press; Oliveira and Cassaro, 1997). The very large, bulging eyes and paws of margays also are distinctive. Cranially, margays have a more convex braincase than oncillas, frontal area not as flat, and longer upper and lower carnasials (as a rule upper carnasial >10 mm and lower carnasial >8 mm in margays, and less than that in oncillas—Allen, 1919; Husson, 1978). Margays differ from the other species of *Leopardus* by having a longer tail and a spot pattern in the pelage not displaying the usual small solid dots characteristic of Geoffroy's cats and kodkods. Pampas cats (*Lynchailurus colocolo*) possess stripes on the limbs that are absent in margays, and Andean cats (*Oreailurus jacobita*) have longer and paler gray fur, transversely striped in the dorsum (Oliveira, in litt.).

GENERAL CHARACTERS. The coat is soft and full. Hair length ranges from 13 to 27 mm on the back and from 7 to 18 mm on the nape. There is individual variation in coat pattern (Oliveira, in press; Oliveira and Cassaro, 1997; Pocock, 1941*b*). Upperparts vary from pale buff-grayish to an intensely rich ochreous-tawny and dark brownish-ochreous color, paling toward the lower part of the sides. Also, there is variation in the spot pattern, from narrow streaky spots to irregular large rounded rosettes with black or dark brown rims and centers darker than the ground color. Rosettes may coalesce to a greater or lesser extent to form short or long bands (Goldman, 1943; Oliveira, in press; Pocock, 1941*b*). However, the usual pattern consists of large solid dots on the mid-back and large and complete rosettes on the sides (Oliveira, in press). The long tail is colored like the body. It has ca. 12 dark rings, most of them incomplete below, and a blackish tip (Pocock, 1941*b*; Thomas, 1904). There are longitudinal lines on the head, nape, and back (ca. 5—Thomas, 1904). The ground color of the ventral surface is whitish, the throat has three transverse dark lines, and the chest

FIG. 1. Adult female *Leopardus wiedii wiedii* from São Paulo, Brazil.

and inguinal region have few or no spots (Goldman, 1943; Thomas, 1904).

The hair of the nape behind the shoulders is reversed and slants forward (Emmons and Feer, 1990; Goldman, 1943; Oliveira, in press; Peterson and Pine, 1982; Pocock, 1941*b*). The back of the ears are black, with a whitish central spot (Guggisberg, 1975; Oliveira, in press; Thomas, 1904). The eyes are very large and bulging. The paws are proportionally big for the size of the body. The pupil contracts to a slit. The muzzle, at the base of the long whiskers, is large and bulging (Emmons and Feer, 1990; Oliveira, in press; Oliveira and Cassaro, 1997; Thomas, 1904; Fig. 1).

Males and females are about the same size. Mean measurements (in mm or kg; range and sample size in parentheses) of males are as follows: length of head and body, 552 (470–720, n = 41); length of tail, 384.4 (305–490, n = 41); and body mass, 3.6 (2.3–4.9, n = 16); for females: length of head and body, 544.2 (501–690, n = 28); length of tail, 391.5 (300–483, n = 28); and body mass, 3.0 (2.3–3.5, n = 5). For Mexican and Central American specimens, length of head and body is 563.9 (490–720, n = 12) for males and 554 (510–613, n = 10) for females; length of tail, 395.9 (333–490, n = 12) for males and 406.4 (355–472, n = 10) for females; and body mass of males and females together is 3.9 (3.4–4.1, n = 4). In northern South America (Peru, Ecuador, Colombia, Venezuela, and Guyana), length of head and body is 564 (530–620, n = 8) for males and 541.6 (501–690, n = 8) for females; and length of tail, 396.5 (366–427, n = 8) for males and 389.6 (351–470, n = 8) for females. For males from Brazil, length of head and body is 540.6 (470–613, n = 21); length of tail 373.3 (305–442, n = 21); and body mass, 3.4 (2.3–4.9, n = 12). For females, length of head and body is 536.3 (480–620, n = 10); length of tail, 378.2 (300–483, n = 10); and body mass, 3 (2.3–3.5, n = 5—Oliveira, 1994, in press; Pocock, 1941*b*). In Venezuela, total length averages 931 (870–990, n = 4) for males and 906.7 (880–940, n = 3) for females; length of tail, 393.8 (370–405, n = 3) for males and 400 (390–410, n = 3) for females; and average body mass for males and females combined is 3.0 (2.6–3.4—Mondolfi, 1986). In Argentina, length of head and body is 529.5 (465–584, n = 6) and length of tail is 364.3 (330–400, n = 6—Redford and Eisenberg, 1992).

The skull (Fig. 2) has a weak structure, no sagittal crest, and an evenly convex dorsal contour (Allen, 1919; Cabrera, 1961; Hall, 1981; Husson, 1978). Skulls of young and adults are very much alike (Fagen and Wiley, 1978). The dental formula is i 3/3, c 1/1, p 3/2, m 1/1, total 30 (Husson, 1978). The range of skull measurements (in mm) of males and females from Mexico and Central America are as follows: greatest length of skull, 89.0–107.0, 86.1–100.6; zygomatic breadth, 61.3–72.2, 59.6–65.8; and crown length of maxillary tooth row, 27.2–29.4, 24.7–29.4 (Hall, 1981). Skull measurements (in mm, n = 33) from a sample of adult specimens from Brazil (mean, range) are as follows: total length, 92.1 (86.6–98.8); condylobasal length, 83.9 (81.1–94.0); palatal length, 32.5 (27.8–36.9); zygomatic breadth, 61.9 (55.9–67.3); interorbital breadth, 16.6 (14.9–19.1); postorbital process, 45.1 (38.7–51.4); postorbital constriction, 32.2 (26.8–36.2); width of braincase, 44.5 (41.0–46.6); length of upper tooth row (C-M1), 27.9 (26.2–30.7); and length of P4, 10.6 (9.6–12.5).

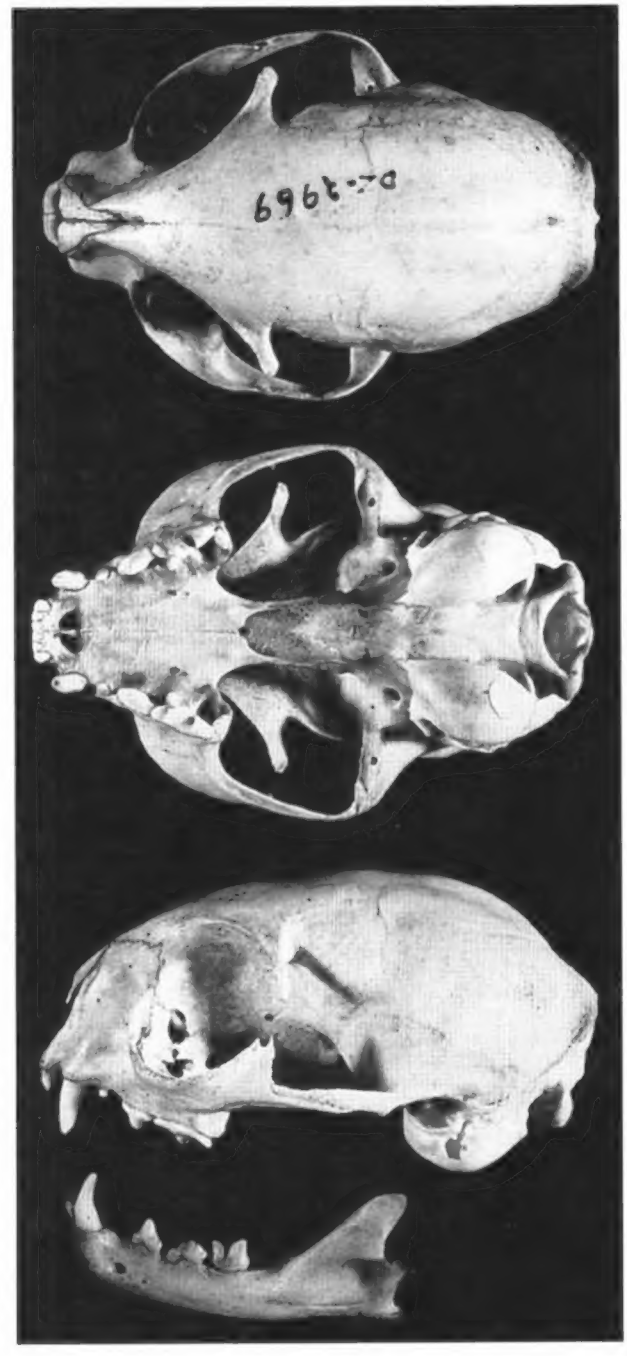

FIG 2. Dorsal, ventral, and lateral views of cranium and lateral view of mandible of a female *Leopardus wiedii wiedii*. Museu de Zoologia da Universidade de São Paulo 2969, from Ituverava (20°20′S, 47°48′W) state of São Paulo, Brazil. Greatest length of cranium is 89.8 mm. Photograph by Fernando T. de Andrade.

DISTRIBUTION. *Leopardus wiedii* is distributed (Fig. 3) from Sinaloa and Tamaulipas, Mexico, through Central America and the mountains and lowland areas of Peru, Ecuador, Bolivia, Colombia, Venezuela, the Guianas, south to Paraguay, the southern portion of Brazil, the Provinces of Missiones and Tucumán in northern Argentina, and northwestern Uruguay (Cabrera, 1957; Hall, 1981; Ximenez et al., 1972). There is only one record of this species from the United States (Eagle Pass, on the Texas-Mexican border), from which the subsumed subspecies *L. w. cooperi* was described (Goldman, 1943; Leopold, 1959). Altitudinal gradient ranges from sea level to at least 1,100 m (Mondolfi, 1986) and up to 3,000 m (Tello, 1986).

FOSSIL RECORD. Margays radiated from the common ancestor of the *Leopardus* group in South America and subsequently invaded North America (Werdelin, 1989). Small felids from late Rancholabrean faunas in Florida and Georgia have been referred to *Herpailurus yagouaroundi* (Ray, 1964, 1967) or considered an extinct species *Felis amnicola* (Gillette, 1976). Werdelin (1985) refers them to *L. wiedii amnicola*, an extinct margay. There is only one subfossil record of margay in North America. The specimen is from the post-Wisconsinan Sabine River, Orange County, Texas (ca. 4.4×10^{-3} years ago—Eddleman and Akersten, 1966). Thus, the paleogeographic range of margays extends into all of the southeastern United States (Werdelin, 1985). The mandibles of margay and jaguarundi differ in the postdental portion of the lower jaw. The coronoid process is narrow and curving in the former and broader and with the anterior border steeply ascending in the latter. Additionally, *L. wiedii* has a shallower coronoid fossa and does not have the lingual bulge which is characteristic of *H. yagouaroundi* (Ray, 1964).

FORM AND FUNCTION. Margays are adapted to arboreal life (Leyhausen, 1963, 1990). The paws are wide and flexible, with

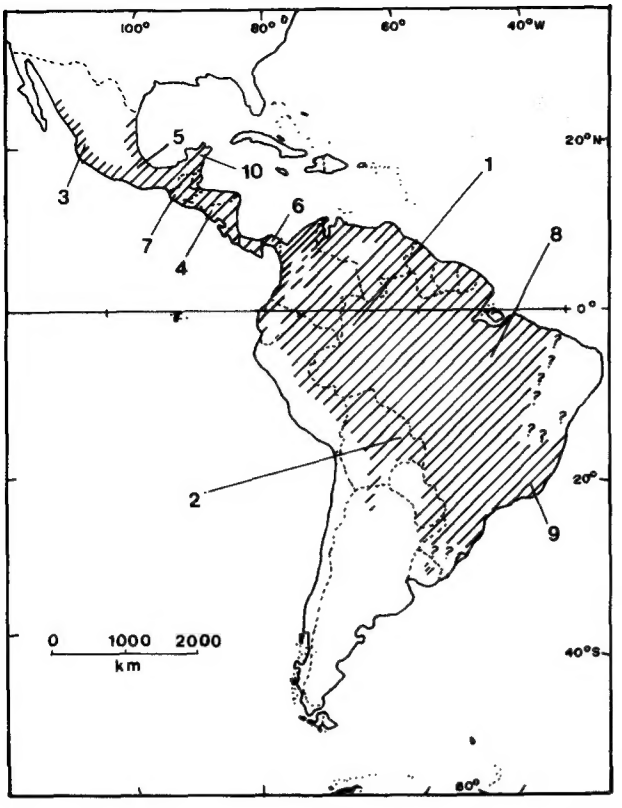

FIG. 3. Geographic distribution of *Leopardus wiedii:* 1, *L. w. amazonica*; 2, *L. w. boliviae*; 3, *L. w. glaucula*; 4, *L. w. nicaraguae*; 5, *L. w. oaxacensis*; 6, *L. w. pirrensis*; 7, *L. w. salvinia*; 8, *L. w. vigens*; 9, *L. w. wiedii*; *10, L. w. yucatanica.* Adapted from Oliveira (1994).

very supple digits, large claws, and mobile metatarsals (Leyhausen, 1963, 1990; Nowak, 1992). The hind feet have the ability to rotate 180° around their longitudinal axis. This feature allows animals to descend a tree head down; the margay is the only cat capable of doing so (Ewer, 1973; Leyhausen, 1963, 1990; Weigel, 1975). The tail is proportionally long, representing more than 70% of the length of the head and body (Oliveira, 1994).

The margay is considered functionally identical to the jaguarundi based on relative maximum gape (52 ± 5.3 mm) and jaw length (51.6 mm), characters supposedly related to capture of prey (Kiltie, 1984, 1988). An emphasis is placed on "craniomandibular" and "functionally" as margays are, in fact, usually smaller, lighter, and have a relatively longer tail than jaguarundis (Oliveira, 1994). However, canines are longer in margays (10.89 mm) than in jaguarundis (9.71 mm—Van Valkenburgh and Ruff, 1987). If c1–3 of these two cats differed similarly from c1–3s, the gape of a jaguarundi would be 1.092 times that of a margay. A similar ratio (1.13) would also exist between margay and oncilla, the next smaller species (Dayan et al., 1990). The relative maximum bite force is 543 ± 110 mm^2 (Kiltie, 1984). Digestibility is more efficient when animals are fed with live rather than with dead chicks (Paula, 1996). Captive margays on supplemented (n = 11) and nonsupplemented diets (n = 16) in Latin American zoos had a mean value of 8.0×10^6 and 5.8×10^6 total sperm per ejaculate, respectively, whereas captives in U.S. zoos on supplemented diets had at least twice as many sperm per ejaculate (16.0×10^6—Swanson et al., 1995). Margays have a relatively low basal rate of metabolism for a meat-eating carnivore (0.28 $cm^3\ g^{-1}\ h^{-1}$), probably due to its arboreal habits and presumptively low muscle mass (McNab, 1989).

ONTOGENY AND REPRODUCTION. The estrous cycle averages 32–36 days, and each heat period lasts 4–10 days. Gestation lasts 81–84 days (Fagen and Wiley, 1978; Mellen, 1993; Pantiff and Anderson, 1980). Litter size has been listed as one or two (Fagen and Wiley, 1978; Pantiff and Anderson, 1980). However, 42 litters reported by Eaton (1984) and Mellen (1993) consisted of a single young, which is more likely, as *L. wiedii* has only one pair of nipples, instead of two as in *L. pardalis* and *L. tigrinus.* The sex ratio of 17 litters was 6:9:2 (males:females:unknown—Mellen, 1993). At birth young weigh 85–125 g (Fagen and Wiley, 1978). There also are reports of two young weighing 163 and 170 g at birth (Petersen and Petersen, 1978).

The eyes open at 11–16 days, and the deciduous canines appear at 20 days, whereas the permanent canines erupt from 99 to 165 days (Fagen and Wiley, 1978; Petersen and Petersen, 1978). Young begin to leave the dens at about 5 weeks of age (Green, 1991). Solid food is first taken at 52–57 days. The daily weight gain for the first four weeks of age averages 16.20 g (15.78–16.50—Petersen and Petersen, 1978). The average body masses of young at 1, 2, 3, and 4 months of age were 300, 710, 1,220, and 1,450 g, respectively (Green, 1991). Weaning occurs at 8 weeks. Although growth rates are similar for both sexes, females attain about 90% of body weight at 8 months and males at 10 months (Petersen and Petersen, 1978). Maturity is achieved between 9 and 12 months of age. Adult pelage is patterned at 6–7 months for texture, and 9–10 months for color (Petersen and Petersen, 1978). Sexual maturity is reached at ca. 2 years of age (Green, 1991; Leyhausen, 1990). Young and adults are similar morphologically (Fagen and Wiley, 1978).

Hollow logs and burrows are used as den sites (Cabrera and Yeppes, 1960). Breeding season was reported as being from October to January, but is probably year-round in the South American tropics (Weigel, 1975). The lifetime number of young potentially produced by a 7-year-old female is five (Oliveira, 1994).

ECOLOGY. Margays are considered to be mainly, if not exclusively, forest dwellers, being more strongly associated with forest habitat, both evergreen and deciduous, than any other tropical American cat (Bisbal, 1989; Guggisberg, 1975; Kleiman and Eisenberg, 1973; Mondolfi, 1986; Weigel, 1975). Habitats include tropical evergreen forests, premontane humid and very humid forests, montane cloud forests, gallery forests, and wet-swampy savannas (Bisbal, 1989; Kleiman and Eisenberg, 1973; Mondolfi, 1986). Although it is possible that this cat is present deep in savannas, and not in adjacent gallery forests or their borders, this has not been confirmed (Oliveira, 1994). In Mexico, *L. wiedii* also is found in the arid lower tropical subzone of the Yucatán, which is characterized by alternations of open savannas with deciduous forests, and narrow strips of evergreen gallery forests (Goldman, 1951). Its occurrence in the semiarid thorny scrub ecosystem (Caatinga) in Brazil seems to be restricted to forested areas within canyons (Oliveira, in litt.). The margay occasionally has been reported outside forested regions, in areas such as shaded coffee and cocoa plantations (Mondolfi, 1986; Tello, 1986; Vaughan, 1983). In Belize, margays use late second-growth forests significantly more than abandoned cornfields and mature subclimax forest (Konecny, 1989). Despite its specialized habitat requirements (Guggisberg, 1975; Mondolfi, 1986; Weigel, 1975), in Bolivia and Brazil *L. wiedii* can subsist in areas with a high degree of forest destruction (Azevedo, 1996; Tello, 1986), including even populated areas with forest patches.

The home range of a radiocollared male in Belize was 10.95 km^2, whereas in southern Brazil the area used by an adult male was 15.9 km^2. These areas are relatively large for animals of their size (Crawshaw, 1995; Konecny, 1989).

More than 21 prey items have been reported (Oliveira, 1994). The diet consists mainly of arboreal mammals (Guggisberg, 1975; Oliveira, 1994; Weigel, 1975) and birds (Leyhausen, 1990), but also includes amphibians (Azevedo, 1996) and reptiles (Oliveira, in litt.). In Belize, nocturnal arboreal mammals comprise 66.6% of the most frequent prey item occurring in feces, whereas 22.2% consisted of diurnal arboreal mammals (Konecny, 1989). In that area, mammals represented 78.4% of minimum total number of prey captured found in fecal droppings, and birds represented 21.6% (Konecny, 1989). The stomach of a specimen from Guatemala contained spiny pocket mice (*Heteromys*), and one from Panama, southern opossum (*Didelphis marsupialis*—Goldman, 1920; Oliveira, 1994). In Venezuela, the stomach contents of three specimens included mostly the terrestrial rodent *Heteromys anomalus* but also squirrels (*Sciurus granatensis*) and cane rats (*Zygodontomys brevicauda*—Mondolfi, 1986). All prey reported from Kartabo, Guyana, were arboreal. These included three-toed sloths (*Bradypus tridactylus*), weeper-capuchin monkeys (*Cebus nigri-*

vitattus), and prehensile-tailed porcupines (*Coendou prehensilis*—Beebe, 1925). However, the cat that had preyed upon them had a body mass of 11.8 kg, which is the size of an ocelot, not a margay. In Brazil, reported prey included water rats (*Scapteromys*), cavies (*Galea spixii* and *Cavia fulgida*), tinamous (*Tinamus solitarius*), chickens, and amphibians (Azevedo, 1996; Carvalho, 1958; Oliveira, 1994; Ximenez, 1982). In Chiapas, Mexico, margays prey upon mice, rats, rabbits, young agoutis (*Dasyprocta*) and pacas (*Agouti paca*), birds, and occasionally on fawns of red brocket deer (*Mazama americana*—Alvarez del Toro, 1977). The arboreal diet is related to the margay's morphological adaptations to move about in trees (Oliveira, 1994). Although insects and plant material frequently were found in fecal droppings from Belize (33.3 and 14.4%, respectively), they were not common food sources (Konecny, 1989). Captive animals in eastern Amazonia have been observed preying on midas tamarins (*Saguinus midas niger*), large Norway rats (*Rattus norvegicus*), lizards (*Tropidurus*), and small passerine birds (Oliveira, in litt.).

The standardized breadth of diet of *L. wiedii* is identical for Belize and Venezuela (0.63 and 0.62, respectively). The mean mass of vertebrate prey is 200 g (89–300 g—Oliveira, 1994). In captivity, the average daily consumption is 286 g, whereas the daily amount defecated is 47 g (Paula, 1996). In Belize, where a small felid assemblage was studied in sympatry, margays show temporal segregation from jaguarundis. The first is active nocturnally, whereas the latter is active diurnally. These two species also differ in patch use. Margays use predominantly late second growth forests, whereas jaguarundis are commonly found in oldfield habitats. Additionally, margays show more arboreal habits, preying mostly on arboreal species, which differentiates it from other carnivores in the area (Konecny, 1989).

In captivity, margays may live 20 years (Prator et al., 1988). Causes of mortality of captive margays in Brazil (n = 13) were diseases of the respiratory system (23%, especially pneumonia), infectious diseases and disorders of the digestive system (15.4%, each), and disorders of the nervous and genitourinary system, and parasites (7.7%, each; Oliveira, in litt.).

BEHAVIOR. Margays are usually nocturnal (Cabrera and Yeppes, 1960; Guggisberg, 1975). In Belize, radiotelemetry revealed that the highest levels of activity are at 0100–0500 h (Konecny, 1989). However, in southern Brazil there is no difference in activity levels between daytime and nightime, and between winter and other seasons combined (Crawshaw, 1995). Captive animals also show higher levels of activity at 0100–0200 h and 0400–0500 h (Petersen, 1979). In Belize, the highest rate of travel occurs at 0100–0300 h, and the lowest rate at 1100–1200 h; mean hourly movement is 273 m/h (range, 0–1,189 m/h). All traveling is on the ground. There is no difference in movement on moonlit and dark nights (Konecny, 1989). In Brazil, mean linear distance moved between locations with 1–5 day intervals varies from 1.3 to 1.8 km (range, 0–3.9 km), with most records at 1–2 km or <1 km (Crawshaw, 1995). The arboreal adaptations and acrobatic abilities of margays have been documented (Ewer, 1973; Guggisberg, 1975; Konecny, 1989; Leyhausen, 1963, 1990; Oliveira, in press; Petersen, 1979; Weigel, 1975; Ximenez, 1982).

Captive margays display suspicion toward strange inanimate and animate objects. They also show certain responses to odors, such as rubbing the chin and cheeks upon smelling certain odors, flehmen caused by the sniffing of urine, squinting of the eyes caused by obnoxious odors, and dropping food if feces are placed nearby while feeding. Vision is well developed, and hearing capabilities seem to be well developed as in all other felids. Eight distinct vocalizations have been recorded: purring, meowing, barking meow, moaning, hissing, spitting, growling, and snarling. Varying intensities and combinations of these vocalizations indicate emotional state. Margays have sex-related vocalizations and specific courtship behaviors (Petersen, 1979). When displaying threat behavior, the back is usually kept slightly arched (rarely with straight back and hooked tail) and the hair along the middle of the back and on the tail is erected. In *L. wiedii*, hind-paw wiping as a display movement is quite separate from micturition or defecation. It is performed particularly before attacking an opponent that is some distance away (Leyhausen, 1979).

GENETICS. *Leopardus wiedii* has 2n = 36 chromosomes, as do the other species of the genus *Leopardus*. FN = 70, with an autosomal complement of 32 metacentric or submetacentric and 2 acrocentric chromosome pairs. This is the same pattern as *L. pardalis* and different from all other Neotropical cats. The X chromosome is nearly metacentric and moderately small, whereas the Y chromosome is a small submetacentric (Wurster and Benirschke, 1968; Wurster-Hill, 1973). The reduction in chromosome number in the genus *Leopardus*, compared with all other felids is, for the margay and ocelot, probably the result of a centromeric fusion of one acrocentric (F) chromosome to either one metacentric or submetacentric chromosome forming a unique (C3) metacentric chromosome in the *Leopardus* group (Wurster-Hill and Centerwall, 1982).

Margays showed polymorphism in eight of 27 loci studied (ES1, FUCA, GOT1, GPT, MDIII, MEI, MPI, PGM3). Only two polymorphic loci were in common with the loci of the ocelot (MEI, MPI—Newman et al., 1985).

CONSERVATION STATUS. Margays are classified as insufficiently known by IUCN and are in appendix I of CITES. The status proposed by the Species Survival Commission/Cat Specialist Group of IUCN globally is in category 4 and regionally in category 3 (category 5 being the lowest conservation priority—Nowell and Jackson, 1996). They also have been classified as endangered (IUCN/SSC/CBSG, 1994) and vulnerable (Oliveira, 1994). The highest negative impacts suggested for the different kinds of human influence on margays were deforestation, habitat alteration, and poaching. Timber extraction, dam construction, mineral exploitation, and predator control for livestock are considered to have a low to moderately-negative impact (Bisbal, 1993; Oliveira, 1994). Now that international trade has ceased, deforestation is the primary threat. However, illegal local trade still continues in some areas. The percentage of protected areas within margay range is estimated at 6–9% (Nowell and Jackson, 1996).

The skins of margays have been commercialized in the past. A total of 125,547 skins was reported to CITES in the trade network between 1976–1985. The highest peak occurred in 1977, when margay skins ranked first amongst the Neotropical cats in trade. There has been a steady decline in trade since 1978 (Broad, 1987, 1988). The annual average trade in live margays reported to CITES for 1976–1990 was 1.7 animals/year (Nowell and Jackson, 1996).

In captivity, *L. wiedii* was found in 48 zoos in Brazil and in zoos participating in ISIS in 1992. However, captive breeding of margays was considered very poor. Between 1989 and 1992 there was an overall reduction of 6.4% in the captive population and an increase in newborn mortality (Oliveira, 1994, 1995). Margays rank fourth in priority for captive breeding of Neotropical felids (Oliveira, 1994, 1995; Wildt et al., 1992). There is a regional studbook for captive animals in Great Britain (Nowell and Jackson, 1996).

REMARKS. The felid radiation that led to the small South American cats (*Leopardus* group) occurred about 12 × 10^6 years ago, as determined by immunological distance (Collier and O'Brien, 1985). However, divergence of *L. wiedii* from other lineages occurred approximately 2–3 × 10^6 years ago (Wayne et al., 1989). It has been suggested that margays diverged rapidly in morphology as a consequence of retention of neotenic features (Fagen and Wiley, 1978). A taxonomic revision of the small Neotropical felids is needed. There is a growing tendency to place all small species with the exception of jaguarundis under the genus *Leopardus*. This grouping is supported by morphologic, immunologic, and karyologic evidence (Herrington, 1986; Salles, 1992; Wayne et al., 1989).

The name *Leopardus* is the Greek word used to describe the leopard (*Panthera pardus*), which in Latin is "pardus." Gray (1842) originally applied the generic name to *griseus* (= *pardalis*), *pictus*, *ellioti*, and *horsfieldi*. Subsequently, he assigned it to the species *pardus* and *onca* (Gray, 1867), but under the rules of nomenclature the generic name had to be applied to one of the four species first described under it (Pocock, 1917). The specific name *wiedii* was given in honor of the German naturalist Prince Maximillian zu Wied, from whose collection the species was described (Allen, 1916).

The name margay was used for the first time by the naturalist Buffon. It is derived from the word "maragao," used by a traveler to describe the cat. This word is, in turn, probably derived from the Guarani "mbaracayá," which means wild cat (Cabrera and Yeppes, 1960). Margays are known by at least 26 different names throughout their geographic range (Oliveira, 1994).

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